

LISTing Newsletter

Newsletter of the Long Island Sinclair/Timex Users Group
(Incorporating N.Y.T.S.E.)

NEXT MEETING OCT. 11 2 P.M.

AT HARVEY'S HOUSE

at 92



TABLE OF CONTENTS

***** ** *****

PG	3,	OL CORNER
PG	4,	TS2068 KEYBOARD SCANNING
PG	5,	MOVING PIXEL WRITES
PG	5,	MOVING MARQUEE
PG	6,	2K D-FILE PAD OUT
PG	7,	BASIC IN STYLE
PG	8,	GLEAMINGS
PG	9,	PROGRAMING TIPS
PG	9,	SHORT UTILITY
PG	9,	LOTTO
PG	10,	KIDS CORNER
PG	10,	NUMBER MASTER

Listing Policy

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We are always looking for articles, programs, reviews, etc. to keep our members informed and entertained. You maintain full copyright.

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LIST OFFICERS

 PRES. HARVEY RAIT
 TRES. ROBERT MALLOY
 COR. SEC. JOHN PAZMINO
 EDITOR. FRED STERN
 LIBR. TOM SKAPINSKI

PLEASE SEND INQUIRIES TO:
 LIST
 MR. HARVEY RAIT
 5 PERI LANE
 VALLEY STREAM, N.Y. 11581

PLEASE SEND SUBMISSIONS TO:
 LISTING
 MR. FREDERIC STERN
 214 ROBERTS ST.
 HOLBROOK, N.Y. 11741

NYTSE

 NYTSE MEETS ON MONDAY THE WEEK
 AFTER THE LIST MEETING AT:
 MISS KIMS RESTAURANT
 PARK AVENUE SOUTH
 BETWEEN 21 ST. AND 22 ST.
 MEETINGS START 7:30 PM.

COMING EVENTS:

 OCT. 11, 1992 LIST MEETING.
 OCT. 19, 1992 NYTSE MEETING

MEETING MINUTES
 REPORTED BY:
 FRED AND MICHAEL STERN

SEPT. 13, 1992

 HARVEY CALLED THE MEETING TO
 ORDER AT 2:30PM. ,

WE RECEIVED A NUMBER OF LETTERS
 DURING THE SUMMER. THEY INCLUDED
 1 MEMBERSHIP RENEWAL AND 3
 REQUESTS FOR PUBLICATIONS.

BOB MALLOY REPORTED THAT WE HAVE
 \$900.00 IN THE TREASURY.

HARVEY PRESENTED A MOTION THAT
 THE LISTING EDITOR (FRED STERN)
 AND THE LIST LIBRARIAN (TOM
 SKAPINSKI) RECEIVE ONE YEARS
 FREE MEMBERSHIP FOR THE MANY
 HOURS OF TIME AND LABOR THEY PUT
 INTO OUR GROUP. THE MOTION WAS
 APPROVED BY UNANIMOUS VOTE.

FRED PRESENTED ANOTHER MOTION,
 ROBERT WEBSTER, A FELLOW
 SINCLAIRIST AND FRIEND OF LIST
 HAS GENEROUSLY DONATED SOFTWARE,
 BOOKS, AND NUMEROUS NEWSLETTERS
 FOR THE LIBRARY. THIS MATERIAL
 WAS SENT BY ROBERT TO BE MADE
 AVAILABLE TO PEOPLE WHO COULD
 USE THIS VALUABLE, HARD TO FIND
 INFORMATION.

FRED REQUESTED THAT FOR HIS
 GENEROUSITY, MR. WEBSTER ALSO
 RECEIVE A ONE YEARS FREE MEMBER-
 SHIP IN LIST. THIS MOTION WAS
 ALSO APPROVED BY UNANIMOUS VOTE.

FRED FINALLY REPORTED ON LISTING
 MATTERS. WE NEED A QL REPORTER
 AS WAS REQUESTED IN THE LAST 2
 ISSUES OF LISTING. WE ALSO NEED
 A FEW NEW QL ARTICLES. UP-COMING
 ISSUES OF LISTING WILL HAVE
 PICTURES.

BOB GILDER MADE A RECOMMENDATION
 THAT FUTURE LIST MEETINGS SHOULD
 HAVE AT LEAST ONE DEMONSTRATION
 EACH. THIS SUGGESTION WAS AGREED
 ON BY ALL ATTENDING MEMBERS.
 FRED WILL ARRANGE A TS1000 DEMO
 FOR THE OCTOBER MEETING.

BOB GILDER DEMONSTRATED THE
 GOLD CARD FROM MIRACLE WITH THE
 ED DISK DRIVES. (SEE QL CORNER
 PAGE 3). THE SPEED OF OPERATION
 WAS EXTREMELY IMPRESSIVE. THE
 OPERATING SYSTEM ALLWS TO HAVE
 TRUE SUB DIRECTORIES.

BASSET BOOK STORE RECENTLY
 OPENED IN SAYVILLE, L.I.. DUR-
 ING THE GRAND OPENING, FRED WENT
 THEIR AND INQUIRED IF THEY HAD
 TIMEX/SINCLAIR COMPUTER BOOKS.
 HE WAS ADVISED THAT THEY HAVE
 1 COPY EACH OF 7 BOOKS ABOUT THE
 T/S. ALL WERE SOLD ON OPENING
 DAY.

REPORT ON THE LIMARC HAMFEST AND
 ELECTRONICS FLEAMARKET WILL BE
 IN NEXT ISSUE.

A FINAL WORD

 MY NAME IS FRED STERN AND I AM
 THE EDITOR OF THIS EDITION OF
 LISTING.

I HOPE YOU ALL HAD A NICE SUMMER
 LISTING HAS A FEW GREAT THINGS
 PLANNED FOR UP-COMING ISSUES.
 I HOPE YOU ENJOY THEM.

THIS ISSUE REPRINTS SOME GREAT
 PAST ARTICLES FROM THE FOLLOWING
 NEWSLETTERS;

C.A.T.S.
 FRIENDLY NEWSLETTER
 TIMEX SURVIVORS FLYER
 T.S.S. NEWSLETTER
 ORIGINALLY PUBLISHED IN 1983 AND
 1984 THIS IS THE STUFF THAT
 TAUGHT US HOW TO PROGRAM, FROM
 THE NEWSLETTERS THAT GAVE US THE
 PROGRAMS WE WANTED. THIS REPRINT
 IS MADE SO THAT THIS MATERIAL IS
 NOT FORGOTTEN, AND THAT THOSE
 NEW TO THE TIMEX COMMUNITY CAN
 LEARN AND BENEFIT FROM IT.

SPECIAL THANKS TO: MICHAEL STERN
 TOM SKAPINSKI, BOB GILDER,
 ROBERT WEBSTER (FOR THE COPIES
 OF THE ABOVE NEWSLETTERS).

SEE YOU ALL AT THE NEXT MEETING.

THE SINCLAIR REPORTER

LIST.



QL CORNER

MIRACLE Systems Ltd., has announced that they are no longer manufacturing their popular and long standing memory expansion units, the Expanderam and Trump Card. They have licensed production and support of the above mentioned interfaces to Ron Dunnett of Qubbesoft, 38 Brunwin Road, Rayne, Braintree, Essex CM7 5BU, UK. Telephone 0376 47852. Contact them for price.

I have just received my second Gold Card from Miracle at the cost of £200 - \$376.00 US, post paid. Needless to say, once you use the Gold Card and then switch back to the Trump Card you realize just how much faster the Gold Card operation is as compared to the older interfaces.

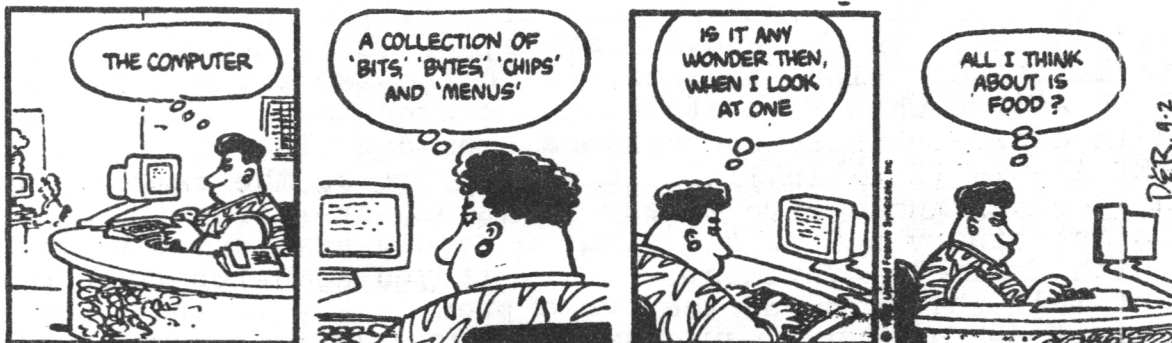
I made another purchase of an ED disk drive, \$95.00. Not only is disk access time faster than the 5 1/4" drives and 3.5" 720K drives but has the advantage of accessing both reading and writing to all 3.5" 720K, 1.4M and 3.2M disks. I will be demonstrating this set up at the September LIST meeting.

It is hard to believe that the QL is still being supported after so many years since its manufacturing has ceased. Throughout the world new Software and hardware is being produced. All you have to do is to thumb through the pages of QL World and The International QL Report publications every issue contains more-and-more advertisers than the previous issues.

Perhaps next month I will outline the products available throughout both publications.

Bob Gilder

BETTY



T/S 2068 Keyboard Scanning

Most programs require user interaction through the keyboard, and use the INPUT or INKEY\$ functions to do this job. This article will discuss some alternative ways to input through the keyboard.

Method #1: Hardware generated interrupts are used in the 2068 to update the TV frames counter and to scan the keyboard for pressed keys. If a pressed key is found, the character code associated with it is determined and stored in system variable LAST-K. If you POKE a zero in 23560, and then immediately PEEK the same location, the PEEK will return the code for a key pressed between the POKE and PEEK, provided that a scan has occurred in this time interval. To insure a scan, place a USR 737 after the POKE. This method is roughly like an INKEY\$ function which returns a code rather than a string variable.

Method #2: If you are willing to use a small amount of machine code, you can directly call the ROM routine which examines the keyboard. This is K-Scan, located at 688d. (In the Spectrum, this same routine is at 028E (hex).) To use K-Scan, you need to know the position code system used in the T/S, and you need to be able to get at the D and E registers, which is where the position codes are located when a return is made from K-Scan to the calling routine. If no key is pressed, D and E hold 255; one key results in 255 in D and the position code in E; two keys results in position codes in both D and E. The position code is a value from 0 to 39, calculated as follows: $(47 - \text{row \#}) - (8 * \text{column \#})$. Here, a "row" means 5 keys in a half-row, such as A S D F G. Rows are numbered 1 to 8, starting with the lower left row and going up and then down. A "column" consists of 8 keys, such as column 2: Z S W 2 9 O L Break/Space. There are 5 columns, numbered 1 thru 5, starting with the outer keys. (Note that there are two redundant keys which are ignored; these are the space-bar and the right side cap shift; these are keys added by Timex which perform no new function but make the keyboard a bit more like a typewriter.) Unlike method #1 or INKEY\$, method #2 allows you to handle two keys pressed at the same time.

Method #3: This method uses the IN function. For example, the BASIC statement LET A = IN 65278 will scan the 1st row (bottom left, 5 keys) and assign to A a value of 31 if no keys are pressed. (Note: Some published programs using IN are for the Spectrum version 2, whose base value is 255, not 31.) If the keys are pressed the value returned is the base value (31) minus the column value of any key pressed. Column values are 1, 2, 4, 8, and 16 for columns 1, 2, 3, 4, and 5 respectively. The number following IN must meet certain criteria. When expressed as a two byte binary number, the least significant ("low") byte must be the port number of the keyboard (i.e. 254 decimal). The most significant ("high") byte must have a "0" in the bit position corresponding to the row to be scanned. In the above example, 65278 in binary has as its high byte 11111110; since the zero is in the 1st bit position, the 1st row will be active when this statement is executed. Rather than get involved in decimal-binary conversions, you can also use a statement like: LET A = IN (256 * BIN 11111110 + 254) to do the same thing. Note too, that you can put a zero in any position, or in any number of positions, in the binary number and simultaneously scan any combination of rows with a single statement. (But, if you scan two rows at once, you cannot tell which row of the two a pressed key is in.) The BASIC equivalent of K-SCAN can be produced, of course, using eight IN statements. But unlike K-SCAN, you can detect the pressing of more than two keys.

Would you like to become a Picasso of the display file? Try this high-resolution plotting routine that has both a pixel cursor and an erase feature. (It is a much modified version of Tim Hartnell's program in TS 2068 Explored). To use, plug a joy stick into the right hand socket of your 2068 and load the self running program. Following the instruction page, a black pixel will appear in the center of the screen. The pixel will plot when moved in any one of eight directions by pressing the b, n, m, g, j, t, y, u keys. With the fire button depressed, the pixel will move without plotting and will erase any dark pixel that it passes over. When your masterpiece is finished, BREAK and save "screens". Patterns may be placed on clear plastic and traced using this program. Clear acetate sheets and luma-color pens are available at the MD Book Exchange. Have fun.

```

5 CLS
7 PRINT "SCREEN D
  RAU PROGRAM" The keys, TYUG
  UENM control the direction of th
  e pixel cursor." AT 12,10;"T
  YU" AT 13,10;"G U" AT 14,10;"BNM
10 PRINT AT 20,5;"Press Any Ke
  y To Continue"
12 PRINT AT 16,3;"Fire button
  (2,2) turns on the erase cursor"
15 PAUSE 0: CLS
20 LET X=127
30 LET Y=87
35 LET XO=X: LET YO=Y
38 IF STICK (2,2)=0 THEN PLOT
  X,Y
50 IF INKEY$(">") THEN GO TO 50
60 IF INKEY$="" THEN GO TO 60
70 LET C$=INKEY$
80 LET X=X+(C$="U")+(C$="J")+(
  C$="M")-(C$="T")-(C$="G")-(C$="B
90 LET Y=Y+(C$="T")+(C$="Y")+(
  C$="U")-(C$="B")-(C$="N")-(C$="M
100 LET X=X-(X>255)+(X<0)
110 LET Y=Y-(Y>175)+(Y<0)
120 IF STICK (2,2)=1 THEN GO TO
  150
130 GO TO 35
150 PLOT INVERSE 1;XO,YO
155 PLOT INVERSE 0;X,Y
160 GO TO 35
9999 SAVE "Sketch" LINE 0

```

THIS COULD BE YOUR
AD
IN THE NEXT ISSUE

MOVING MARQUEE DISPLAY

TS1000

```

10 REM MOVING MARQUEE DISPLAY
  BY J.M.VALLIN 3DEC83
20 GOTO 30
30 FOR M=A TO C
40 PRINT AT B+E,A;A$(M) ( TO E*
  E+D); AT B+E+A,E+E+D;B$(D-M); AT C
  *D,A;A$(D-M) (B TO ); AT D=C-A,A;B
  $(D-M); AT B+E+A,B;M$( TO E+E+B)
50 LET M$=M$(B TO )+M$(A)
60 NEXT M
70 GOTO B+C+E
80 DIM A$(3,32)
90 DIM B$(3,1)
100 LET A=1
110 LET B=2
120 LET C=3
130 LET D=4
140 LET E=5
150 PRINT AT 10,7;"ENTER A MESSAGE
  AGE"
160 INPUT M$
170 IF LEN,M$<30 THEN LET M$=M$
  +
  " (LEN M$+A TO 31)
180 LET M$=M$+" "
190 CLS
200 LET A$(A)="- + + + + + + + + +
  + + + + + + + + + + + + + + + + +
  + + + + + + + + + + + + + + + + +
  + + + + + + + + + + + + + + + + +
210 LET A$(B)=A$(A) (30)+A$(A) (
  TO 29)
220 LET A$(3)=A$(B) (30)+A$(B) (
  TO 29)
230 CLS
240 LET B$(A)="- "
250 LET B$(B)="- "
260 LET B$(3)=B$(B)
270 FOR M=A TO 29
280 PRINT AT 10,M;A$(A,M)
290 NEXT M
300 PRINT AT 11,29;B$(B)
310 FOR M=A TO 29
320 PRINT AT 12,30-M;A$(3,31-M)
330 NEXT M
340 PRINT AT 11,A;B$(B)
350 FOR M=A TO 27
360 PRINT AT 11,M+A;M$(M)
370 NEXT M
380 GOTO 30

```

TS2068

PROGRAMMING HINTS

It is possible to change the paper or the ink color without clearing the screen. To do this type in the following.

```
DIM A$(704)
```

Then when you want to change the paper color, type:

```
PRINT AT 0,0; OVER 1; PAPER 1;
INK 0: A$
```

And now the PAPER and INK will change right before your eyes. The PAPER and INK colors can be changed to whatever you want.

From C.A.T.S. 6-84

2K D-FILE PAD OUT

by George White

Uncle Clive came up with a clever way to save memory in the tiny TS machines; the display file is collapsed if RAMTOP indicates an unexpanded memory. Almost 800 bytes may be put to other uses when there are no characters in the display. But this creates a problem if you write machine code programs that fit both the 2K and the memory enhanced machines.

The easiest way to present characters in MC, is to poke them into the display file. Of course this requires that the display file of the 2K TS1000 match the D-file of an expanded machine. This is sometimes called PADDING OUT the D-file of the smaller Timex Sinclair but is in fact accomplished by using the same CLS routine for both computers.

The CLS routine starts at 2602 in ROM and checks RAMTOP for 3.5K of memory at address 2615. If RAMTOP shows expanded memory CLS continues at 2622.

The sixteen byte MC sub-routine shown in listing 1, duplicates the first part of the CLS routine, avoids the check of RAMTOP, and completes CLS by jumping to address 2622. In this way a 2K machine can be made to have a full display file and react like a bigger machine.

Memory is no longer conserved so only short programs may be written, and alas this scheme can not work with a 1K ZX81 without modifications.

Once D-file is established the screen may be cleared with this routine or the routine in listing 2, but not by normal CLS calls. Both listings are read left to right, top to bottom, and may be put anywhere in memory in decimal form.

```
***** USR 15002 *****
TYPE THIS IN IF YOU FIND YOUR-
SELF IN AN INPUT YOU CAN'T GET
OUT OF.
```

```
***** DIM A$(704) *****
*** PRINT AT 0,0; OVER 1;
    PAPER 1; INK 6; AS *****
ALLOUS YOU TO CHANGE PAPER AND
INK COLOR WITHOUT CLEARING
SCREEN.
```

```
***** PRINT #1; AT 0,2; "HI" **
***** PRINT #1; AT 1,5; "BY" **
***** PAUSE 4E4 *****
PRINTS ON LINES 22 AND 23
```

Listing 1

6	24	253	203
1	142	14	33
197	205	24	9
193	195	62	10

MC CLS with PAD OUT

* *
* *

* *
* *

Listing 2

42	12	64	35
175	14	24	6
32	119	35	16
252	35	13	32
246	201		

MC quick CLS big D-FILE
(18 bytes)

* *

* *

LITTLE GOODIES
FOR THE 2068

by George Mockridge

The following "little goodies" are a collection of tips, aids, hints, etc. that should prove helpful in 2068 programming. If you have a "little goodie" please send it to TIMELINEZ and we will add it to the list.

```
***** POKE 23609,100 *****
BEEP WHEN ANY KEY PRESSED.
```

```
***** POKE 23692,255 *****
USE BEFORE EVERY PRINT TO DEFEAT
SCROLL.
```

```
***** POKE 23658,0 *****
PUT 2068 IN CAPS MODE.
```

```
***** POKE 23658,0 *****
TAKE 2068 OUT OF CAPS MODE.
```

```
***** PAUSE 4E4 *****
PAUSE UNTIL ANY KEY PRESSED.
```

```
*** POKE 23561,0 (0=1 TO 35) ***
TIME THAT A KEY MUST BE HELD
DOWN BEFORE IT REPEATS. PREFER
10-15 FOR TEXT.
```

```
*** POKE 23562,0 (0=1 TO 5) ***
DELAY BETWEEN SUCCESSIVE REPEATS
OF A KEY HELD DOWN. PREFER 3 FOR
TEXT.
```

BASIC WITH STYLE

From
Friendly Newsletter
Vol 1 #1

TE1000

For the Experienced
Basic Programmer

This column is for the reader who already programs in Basic, and is ready to improve his skills and become a better programmer.

Have you ever written a FOR NEXT loop which ran too darn slow? The first thing you do is make sure you don't have any statements inside the loop which don't have to be inside the loop. But what if it's still too slow? This article concerns a method of speeding up FOR/NEXT loops and GOTO and GOSUB.

First, here is something for you to try: Load a long program, the longer the better. Then, enter the following code; it doesn't matter if you're over-writing the program you just loaded from tape.

```
9900 FOR N=1 TO 50
9910 NEXT N
9920 STOP
```

Now Put your machine in SLOW mode and run this loop (RUN 9900) and time it—get a clock and count seconds from the moment you hit ENTER after RUN 9900 until the report code 9/9920 appears on the screen.

Now enter the same code at line 10 like this:

```
10 FOR N=1 TO 50
20 NEXT N
30 STOP
```

Run that loop and time it.

Surprise! It runs faster at the lower line number. A lot faster. In my test, I got 15 seconds versus 2 seconds.

Well, let's try another experiment. This time we'll test GOSUB's.

```
9901 RETURN
9910 GOSUB 9901
9920 GOSUB 9901
9930 GOSUB 9901
9940 GOSUB 9901
9950 GOSUB 9901
9960 GOSUB 9901
9970 GOSUB 9901
9980 GOSUB 9901
9990 GOSUB 9901
9995 STOP
```

Make sure the machine is in slow mode, then RUN 9910 and time it.

I got 6 seconds. Now try this:

```
1 RETURN
10 GOSUB 1
20 GOSUB 1
30 GOSUB 1
40 GOSUB 1
50 GOSUB 1
60 GOSUB 1
70 GOSUB 1
80 GOSUB 1
90 GOSUB 1
95 STOP
```

When I RUN I get less than 1 second. So nine GOSUB's and RETURN's take 6 seconds at the end of a 16K program and less than 1 second at the beginning. The same thing happens with GOTO.

Why? Apparently, when the Sinclair wants to find a line number, it starts at the beginning of the program and looks at each line number in order until it finds the one it's looking for.

So if your FOR/NEXT loop at line number 5500 runs too slow, put it near the beginning of the program. Likewise, if a particular section of your code has a lot of GOTO's you might want to make that section a sub-routine, and put it near the beginning of the program.

Program Line Organization

All of this suggests a different organization of program lines than one might otherwise use. Here is the system I use.

Line Number	Contents
0-99	Machine Code Routines and begin statement
100-999	FOR/NEXT loops
1000-7999	Sub-routines
8000-9499	Main Program
9500-9999	Utilities

The machine code routines are contained in REM statements. The first line after these REM statements is a begin statement (GOTO 8000), so the user can start the program simply by entering RUN or GOTO 1.

I leave so much room for sub-routines because my main program is usually only 20 lines or so. More about that in the next column.

Last of all, the utilities are those routines which help you write the program, but aren't actually part of the program. An example is the "Bytes Remaining" utility listed elsewhere in this newsletter.

GLEANINGS

stolen from the Timex Survivors Flyer

P.O. Box 575, 2 South Street, Williamsburg, MA

01096

TE2055

1st + 2nd Displays

You can use this routine to move
the Function Dispatcher so you
can utilize the 2nd Dispatcher.

```
10 CLEAR 39999
20 FOR i=40000 to 40017
30 READ n:POKE i,n
40 NEXT i
50 DATA 1,254,254,205,153,100,62,
  2,205,142,14,1,255,0,205,89,
  252,201
```

After the 1st use, you then have
to use these commands--otherwise
you will BOMB OUT.

OUT 255,2 for the 2nd Display
OUT 255,0 for the 1st Display

22nd +23rd Display Lines

If you would like to use the
22nd + 23rd lines on the screen
without using the INPUT COMMAND,
use this command

```
PRINT @1;AT 0,2;"Hi there!!"
PRINT @1;AT 1,5;"Bye Now!!"
```

The computer will continue to
process the program,which is
fine unless you have to put a
question or a prompt and are
waiting for a response.

In which case you would have to
put in a loop so that until you
got your needed answer the
program would not continue.

Just for FUN try this

```
*****
01 CLS
05 INK 0: ON ERR GO TO 1
10 INPUT INK0;"Enter Number";n
15 IF n<210 THEN GO TO 10
17 IF n>800 THEN GO TO 10
20 INPUT INK0;"Enter Ink";i
25 IF i <0 THEN GO TO 20
30 IF i >7 THEN GO TO 20
35 CLS
40 INK i; PLOT 75,85: DRAW 50,50
  ,n
42 REM 50,50 can be changed to
  25,25
43 PRINT @1; AT 0,0;"PRESS Z for
  copy to PRINTER"
45 PRINT @1; AT 0,0;"Press any
  other key to continue"
46 IF INKEY$="" THEN GO TO 46
49 IF INKEY$="Z" THEN COPY :
  LPRINT "Number";n:LPRINT:
  LPRINT
50 GO TO 10
```

SCROLLING

If you POKE a number from 1 to
255 into the location 23692, the
computer will scroll that many
lines plus 21 (IF THERE IS THAT
MUCH TEXT TO BE SCROLLED)

Otherwise it will return to the
beginning of the text and use
hat to print the number of
lines you estimated.

POKE 23692,@
@=Any number from 1 to 255

Faster Control

If you have a long text to edit
and you feel like your computer
is worn out before it starts,-OR
if your laser guns aren't firing
fast enough for you,--Try these
commands BUT BEWARE!!!

POKE 23561,@ (@ = 1 TO 35)
(I prefer 10 to 15 for Text)

POKE 23562,@ (@ = 1 to 5)
(I prefer 3 for Text)

For the touch typist this is
really a terrific advantage.

POKE 23561,@ (@ = 1 to 35)
(I prefer 1 to 10 for Games)

POKE 23562,@ (@ = 1 to 5)
(I prefer 1 for Games)

BEEP for TYPING

For those of you who are Hard
of Hearing or just like to hear
the reassuring beep of the type-
writer keys, Try this Command:

POKE 23609,@ (@ = 1 to 255)

The sounds range from wood
blocks to Morse Code.

0 being no sound.

MORE FLAGS

For those of you that do some
business programming where you
would like to capitalize
occasionally, here is POKE for
you!!

POKE 23638,8 (CAPITALS)
,0 (Lower case)

PROGRAMMING TIPS

TS2055

Here is a cute routine to show your friends.

PLOT 55,25 :DRAW 100,100,4100

Did you know that you can use DRAW command with a radius variable?

Here is another cute routine from Dale Barnard.

```
10 LET Z=1
20 FOR Y=1 TO 44
30 CIRCLE Z,87,Y
40 CIRCLE 255-Z,87,Y
50 CIRCLE 128,Z,Y
60 CIRCLE 128,174,Z,Y
70 NEXT Y
```

This next routine some of you may have seen in one of my old catalogs. It lowers RAMTOP and places a handwritten character set above it. Other TS Users I have talked to have placed things above RAMTOP like special characters, Foreign languages, etc... The control variables that tell the computer where to find the normal character set are found at location 23606 and 23607. By poking in a new location to these two variables, you can direct the computer to a location where you can store any character you wish.

By changing the Data lines to a different 8 byte value, you can place other characters above RAMTOP where LOAD will not effect it. It can be cleared by entering CLEAR 55535 or turning off the computer.

Thanks to Joe Mead for this program (program starts on the next page).

AERCO-TASWORD TWO PATCH

If you would like to use TASWORD TWO (TM) Word Processor with your AERCO Interface, you must poke in this patch first.

```
POKE 57999,127
POKE 58001,103
POKE 58008,127
POKE 58014,219
POKE 58015,127
```

We thank the people at AERCO for this correction.

TS 2050 MODEMS vs Power Strips

We hear from our customers that they have a problem loading the software tape that comes with the Westridge TS 2050 modem. If you are using a Power Strip, move your plug on the recorder to another outlet and it should work. Does anybody want to comment on that?

From T.S.S. News letter

10-84

A SHORT UTILITY

For the Basic Programmer

A utility is a program which helps you write other programs.

This utility lets you know how much empty space remains in your memory.

I enter it at 9900 so it won't interfere with the program I'm writing. When I think I may be close to running out of memory I "GOTO 9900", and I see how many bytes I have left.

The number displayed is actually not exactly correct, but it's very close.

```
9900 PRINT PEEK 16386+256*PEEK 16387-PEEK 16412-256*PEEK 16413;
      "BYTES REMAIN"
```

From "Friendly"
Vol 4 #1

From C.A.T.S. 12-84

```
1 REM LOTTO BY MYRON CRISWELL
5 LET T$="ABCDEFGH.IJ"
10 FOR J=1 TO 10
20 DIM T(6)
30 DIM A(40)
40 FOR X=1 TO 5
50 LET B=INT (RND*39+1.5)
60 LET A(B)=B
70 NEXT X
80 LET X=1
90 FOR B=1 TO 40
100 IF A(B)=0 THEN GO TO 130
110 LET T(X)=A(B)
120 LET X=X+1
130 NEXT B
140 IF T(6)=0 THEN GO TO 20
145 PRINT T$(J)
150 FOR X=1 TO 6
160 PRINT TAB 5*X;T(X)
170 NEXT X
180 PRINT
185 PRINT
190 NEXT J
200 COPY
210 STOP
9990 CLEAR
9991 SAVE "LOTTO"
9993 RUN
```

A	3	4	11	12	22	24
B	11	17	21	24	33	39
C	9	10	18	22	30	35
D	9	23	24	26	35	36
E	2	3	16	27	35	36
F	9	10	15	23	33	37
G	3	4	13	24	33	36
H	1	4	22	26	35	37
I	2	10	18	19	24	35
J	3	3	12	21	22	31



KID'S CORNER

TS1000

DEAR FELLO COMPUTERITES:
I AM MIKE H. STERN. THIS SUMMER
I LEARNED ABOUT GRAPHICS,
I WANT TO SHOW YOU A FEW;

SCHOOL BUS
***** **

100 LPRINT "

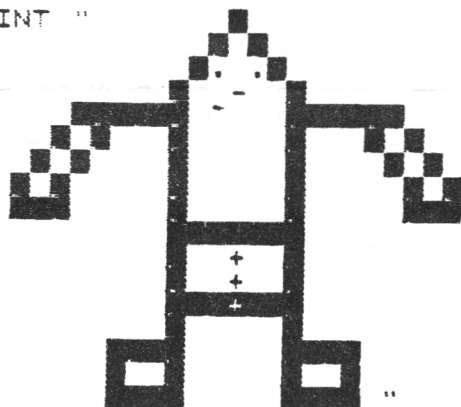


200 GOTO 100



ROBOT

100 LPRINT "



200 GOTO 100

FROM *Mike Stern*
(REPORTOR)

Number Master

By Charlie Day

TS1000

This game is very much like MASTERMIND, except you use numbers instead of colors. You have ten guesses to guess the number. You enter a four digit number for each guess which is your guess what the number is. A '1' will appear in the positions of the numbers that are in the correct position. An inverse '1' will appear if a number is the actual number, but not in the correct place. A '0' will appear in the position if the number is not the correct number. The game is very simple and can easily be modified. If you want to make the game harder you can change the number '4' in line 140 to a number greater than 4. This is one program that you can really play with, so go ahead, don't be shy.

100 REM MASTER NUMBER FOR T/S
1000-BY CHARLIE DAY
105 PRINT TAB 10;"NUMBER MASTER"

```
110 LET AS=""
120 RAND
130 FOR I=1 TO 4
140 LET A=(INT (RND*4+1))
150 LET AS=AS+STR$ A
160 NEXT I
170 FOR I=1 TO 10
180 PRINT
185 PRINT "GUESS NUMBER ";I
186 DIM N(4)
190 INPUT BS
195 PRINT BS
196 IF BS=AS THEN GO TO 320
200 FOR J=1 TO 4
210 IF AS(J TO J)=BS(J TO J) TH
EN LET N(J)=1
220 IF AS(J TO J)=BS(J TO J) TH
EN GO TO 260
230 FOR K=1 TO 4
240 IF BS(J TO J)=AS(K TO K) TH
EN LET N(J)=2
250 NEXT K
260 NEXT J
270 FOR K=10 TO 13
280 IF N(K-9)=1 THEN PRINT ;"1"
;
290 IF N(K-9)=2 THEN PRINT ;"[use
an inverse 1 here]"
295 IF N(K-9)=0 THEN PRINT ;"0"
;
296 NEXT K
300 NEXT I
310 GO TO 330
320 PRINT
325 PRINT "CORRECT IN ";I;" GUE
SS"
330 PRINT AT 20,1;"[use inverse
characrs] PRESS ANY KEY TO PLAY
AGAIN"
340 PRINT AT 20,1;"PRESS ANY KE
Y TO PLAY AGAIN"
350 IF INKEY$="" THEN GO TO 330
360 RUN
```

LONG ISLAND SINCLAIR TIMEX

USERS GROUP PRESENTS

ZX-81 AND TS1000

TECHNICAL TIDBIT'S

PART II
